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SEQUENCE LISTING

<110> Vega MASIGNANI

<120> ADP-RIBOSYLATING TOXIN FROM LISTERIA MONOCYTOGENES

<130> PP020009.0003

<140> 10/552,192

<141> 2004-04-08

<150> GB0308198.1

<151> 2003-04-09

<160> 29

<170> SeqWin99, version 1.02

<210> 1

<211> 604

<212> PRT

<213> Listeria monocytogenes

<400> 1

Met Lys Glu Val Asn Tyr Arg Glu Asp Asp Trp Arg Glu Ala Lys Ser  
1 5 10 15

Ala Leu Ala Pro Phe Ala Ala Ala Asn Trp Val Gly Gly Leu Phe Asn  
20 25 30

Asn Leu Glu Lys Val Ser Lys Asn Met Glu Glu Ala Glu Glu Asp Val  
35 40 45

Gln Glu Leu Asp Ser Asp His Ala Ile Ser Phe Gln His Thr Asn Tyr  
50 55 60

Arg Gly Lys Tyr Ser Ala Ile Glu Asp Asp Leu Met Val Leu Tyr Lys  
65 70 75 80

Phe Ser Cys His Ala Gly Glu Lys Met Glu Thr Leu Val Asp Gln Pro  
85 90 95

Phe Tyr Glu Lys Leu Asp Ala Phe Val Asp Gly Met Gln Asp Leu Ser  
100 105 110

Ile Ser Thr Tyr Ser Thr Thr Asn Arg Ile Gly Ala Lys Ser Lys Gln  
115 120 125

Thr Tyr Thr Thr Thr Ser Gly Gly Ser Gln Val Ile Glu Ser Ile Lys  
130 135 140

Glu Gly Ala Thr Ile Glu Asp Leu Met Asn Gly Asp Asn Phe Tyr Ala  
145 150 155 160

Asn Gln Met Gln Leu Gln Tyr Arg Asp Trp Gln Arg Ala Asn Pro Asp  
165 170 175

Gln Asp Val Ser Lys Lys Asp Phe Gln Met Gly Met Leu His Ser Arg  
180 185 190

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Ala Phe Glu Tyr Lys Ser Ile Lys Asp Glu Gln Gln Glu Lys Glu Phe  
195 200 205

Trp Val Asn Ile Val Ala Thr Val Val Ile Val Gly Val Ser Ile Phe  
210 215 220

Cys Pro Pro Ala Gly Leu Ala Leu Ala Val Gly Tyr Gly Ser Leu Glu  
225 230 235 240

Ala Gly Ser Ala Ile Ser Gly Lys Asp Trp Val Ser Gly Arg Glu Leu  
245 250 255

Ser Thr Glu Glu Arg Ala Leu Arg Gly Gly Leu Ala Leu Leu Asp Ile  
260 265 270

Val Pro Gly Val Lys Ala Leu Ser Thr Gly Ala Lys Ala Ala Ser Ala  
275 280 285

Gly Ser Lys Leu Val Arg Val Gly Asp Asn Val Leu Ala Gly Ser Lys  
290 295 300

Asn Val Gly Lys Gly Thr Ile Asp Asn Gly Ile Gln Ala Gly Lys Gln  
305 310 315 320

Ala Met Asp Leu Arg Leu Ala Asn Ala Lys Lys Val Ser Glu Ala Val  
325 330 335

Gln Lys Lys Leu Thr Lys Asp Leu Asp Asp Ile Gly Thr Met Ala Lys  
340 345 350

Thr Ile Gln Asn Lys Thr Lys Glu Thr Phe Thr Leu Pro Pro Arg Glu  
355 360 365

Gln Leu Ala Phe Ala Arg Gly Gly Ser Ile Pro Glu Gln Ser Ala Thr  
370 375 380

Gly Ala Ala Ala Ile Ala Ala Lys Lys Lys Leu Lys Asp Ile Met Gln  
385 390 395 400

Asn Met Asp Asn Leu Asn Val Lys Gly Gly Gly Lys Asp Asp Ile Ile  
405 410 415

Glu Gln Asn Lys Ser Leu Lys Phe Thr Ser Leu Glu Glu Ser Glu Lys  
420 425 430

Trp Gly Ile Asp Gly Phe Ser Val Trp Arg Asn Ser Leu Ser Ser Arg  
435 440 445

Glu Ile Gln Ala Ile Arg Asp Tyr Thr Asp Ile Trp His Tyr Gly Asn  
450 455 460

Met Asn Gly Tyr Leu Arg Gly Ser Val Glu Lys Leu Ala Pro Asp Asn  
465 470 475 480

Ala Glu Arg Ile Lys Asn Leu Ser Ser Ala Leu Glu Lys Ala Glu Leu  
485 490 495

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Pro Asp Asn Ile Ile Leu Tyr Arg Gly Thr Ser Ser Glu Ile Leu Asp  
500 505 510

Asn Phe Leu Asp Leu Lys Asn Leu Asn Tyr Gln Asn Leu Val Gly Lys  
515 520 525

Thr Ile Glu Glu Lys Gly Phe Met Ser Thr Thr Thr Ile Ser Asn Gln  
530 535 540

Thr Phe Ser Gly Asn Val Thr Met Lys Ile Asn Ala Pro Lys Gly Ser  
545 550 555 560

Lys Gly Ala Tyr Leu Ala His Phe Ser Glu Thr Pro Glu Glu Ala Glu  
565 570 575

Val Leu Phe Asn Ile Gly Gln Lys Met Leu Ile Lys Glu Val Thr Glu  
580 585 590

Leu Asn Gly Lys Ile Glu Ile Ile Val Asp Leu Leu  
595 600

<210> 2  
<211> 1815  
<212> DNA  
<213> *Listeria monocytogenes*

<400> 2  
atgaaagaag tcaactaccg agaagacgac tggcgtgaag ccaaaagtgc cctcgctcca 60  
tttgccgcag cgaattgggt aggcggttta ttcaataatt tagaaaaagt atcgaaaaat 120  
atggaagaag cggaagaaga tgtccaagag ttggactcag accacgcgat ttcgtttcaa 180  
cacaccaact atcgcgggaa gtacagcgct atcgaagacg atttgatggt attgtataag 240  
tttagattgtc atgcagggga aaagatggaa accctggtag accaaccgtt ctatgagaag 300  
ttagacgcgt ttgtggatgg catgcaagat ttgagtattt cgacgtattc taccaccaac 360  
cggattggtg cgaagtcgaa acaaacctat acaactacat ctggcggttc gcaagtcac 420  
gagttccatca aagaaggtgc gacgatcgaa gatttgatga atggcgataa cttctacgca 480  
aaccaaatgc aactacaata cagggaactgg caacgagcga atccagatca agatgtgagt 540  
aagaaagact ttcaaattggg aatgtttacat agtcgggcat ttgaatataa atcaattaaa 600  
gatgaacaac aagagaaaga attttgggtc aacattgtgg caaccgtggt gattgtggga 660  
gtcagtattt tctgcccacc cgccggcctt gccttagccg taggatacgg gagtttagaa 720  
gctggttcgg caatcagtgga gaaggactgg gtatctggcc gtgaactaag tacagaagaa 780  
cgagcgcttc gtggcggttt agcactgcta gatatcggtc caggtgtgaa agcattgagc 840  
acaggagcga aagctgccag tgccggctcg aaacttgtcc gcgtaggcga taatgtttta 900  
gcaggtagca agaacgtcgg caaaggaacc atcgacaatg gcattcaagc aggaaaacaa 960  
gcgatggatc tccggttagc caatgcgaaa aaagtcagcg aagctgtcca aaagaaactc 1020  
accaaagacc ttgacgatat cggcacgatg gccaaaacca tccaaaacaa aaccaaagaa 1080  
accttcacac ttccaccgag agagcaactc gcctttgcga gaggaggcag tattccggaa 1140  
caaagcgcca ccggagccgc cgcgatagcc gcgaagaaaa agctgaaaga tattatgcag 1200  
aacatggata atttgaatgt gaagggcggc gggaaagatg atataattga acaaaataaa 1260  
agccttaagt ttacttcatt agaggaatcc gagaaatggg gaattgatgg tttttcagta 1320  
tgagaaact ctttatcttc tcgtgaaatc caagctatta gggactatac agacatttgg 1380  
cattatggaa atatgaatgg ttattttaaga ggaagtgtcg aaaaacttgc cccagataat 1440  
gcagaaagaa ttaagaatct aagcagtgtc ttggaaaaag cagagttacc tgataatata 1500  
attttatata gaggaactag ttctgaaata ttggataact ttcttgattt aaagaattta 1560  
aattaccaa atttagttgg gaaaacaatt gaagaaaaag gatttatgag tacaactacc 1620  
ataagtaatc aaacgttctc aggaacggtt acaatgaaaa tcaacgctcc taaaggtagc 1680  
aaaggtgcat atctagctca ttttagtgaa acacctgaag aagcagaggt attgtttaat 1740  
atagggcaaa aaatgttaat aaaagaagtt acggaactta acggcaagat agaaattata 1800  
gttgacttat tataa 1815

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<210> 3  
<211> 309  
<212> PRT  
<213> *Listeria innocua*

<400> 3  
Met Lys Glu Val Asn Tyr Arg Glu Asp Asp Trp Arg Glu Ala Lys Ser  
1 5 10 15  
Ala Leu Ala Pro Phe Ala Ala Ala Asn Trp Val Gly Gly Leu Phe Asn  
20 25 30  
Asn Leu Glu Lys Val Ser Lys Asn Met Glu Glu Ala Glu Glu Asp Ile  
35 40 45  
Gln Glu Leu Asp Ser Asp Arg Ala Ile Ser Phe Gln His Thr Asn Tyr  
50 55 60  
Arg Gly Lys Tyr Ser Ala Ile Glu Asp Asp Leu Met Val Leu Tyr Lys  
65 70 75 80  
Phe Ser Cys His Ala Gly Glu Lys Met Glu Thr Leu Val Asp Gln Pro  
85 90 95  
Phe Tyr Glu Lys Leu Asp Ala Phe Val Asp Gly Met Gln Asp Leu Ser  
100 105 110  
Ile Ser Thr Tyr Ser Thr Thr Asn Arg Ile Gly Ala Lys Ser Lys Gln  
115 120 125  
Thr Tyr Met Ser Ser Tyr Gly Asn Gln Pro Gln Val Ile Glu Ser Val  
130 135 140  
Lys Asp Asn Ala Thr Ile Glu Asp Leu Leu Asn Gly Asp Asn Phe Tyr  
145 150 155 160  
Ala Asn Gln Met Gln Leu Gln Tyr Arg Asp Trp Gln Arg Ala Asn Pro  
165 170 175  
Asn Gln Asp Val Ser Lys Lys Asp Phe Gln Met Gly Met Leu His Ser  
180 185 190  
Arg Val Phe Glu Tyr Lys Ser Ile Lys Asp Glu Gln Gln Glu Lys Glu  
195 200 205  
Phe Trp Val Asn Ile Val Ala Thr Val Val Ile Val Gly Val Ser Ile  
210 215 220  
Phe Cys Pro Pro Ala Gly Leu Ala Leu Ala Val Gly Tyr Gly Ser Leu  
225 230 235 240  
Glu Ala Gly Ser Ala Ile Ser Gly Lys Asp Trp Val Ser Gly Arg Glu  
245 250 255  
Leu Ser Thr Glu Glu Arg Ala Leu Arg Gly Gly Leu Ala Leu Leu Asp  
260 265 270

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Ile Val Pro Gly Val Lys Ala Leu Ser Thr Gly Ala Lys Ala Ala Ser  
275 280 285

Ala Gly Ser Lys Leu Val Arg Val Gly Asp Asn Ile Leu Val Gly Ser  
290 295 300

Lys Asn Val Gly Lys  
305

<210> 4  
<211> 11  
<212> PRT  
<213> Escherichia coli

<400> 4  
Lys Leu Tyr Arg Ala Asp Ser Arg Pro Pro Asp  
1 5 10

<210> 5  
<211> 9  
<212> PRT  
<213> Escherichia coli

<400> 5  
Leu Tyr Asp His Ala Arg Gly Thr Gln  
1 5

<210> 6  
<211> 15  
<212> PRT  
<213> Escherichia coli

<400> 6  
Tyr Asp Asp Gly Tyr Val Ser Thr Ser Leu Ser Leu Arg Ser Ala  
1 5 10 15

<210> 7  
<211> 15  
<212> PRT  
<213> Escherichia coli

<400> 7  
Ser Pro His Pro Tyr Glu Gln Glu Val Ser Ala Leu Gly Gly Ile  
1 5 10 15

<210> 8  
<211> 11  
<212> PRT  
<213> Neisseria meningitidis

<400> 8  
Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp  
1 5 10

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<210> 9  
<211> 9  
<212> PRT  
<213> Neisseria meningitidis

<400> 9  
Val Tyr Ala His Gln Ile Glu Thr Gly  
1 5

<210> 10  
<211> 15  
<212> PRT  
<213> Neisseria meningitidis

<400> 10  
Tyr Asp Gly Cys Tyr Ile Ser Thr Thr Thr Asp Lys Glu Ile Ala  
1 5 10 15

<210> 11  
<211> 15  
<212> PRT  
<213> Neisseria meningitidis

<400> 11  
Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp  
1 5 10 15

<210> 12  
<211> 52  
<212> PRT  
<213> Streptomyces coelicolor

<400> 12  
Thr Leu Tyr Arg Ser Asp Ser Arg Gly Pro Gln Val Val Phe Glu Glu  
1 5 10 15

Gly Phe His Ala Lys Asp Val Gln Asn Gly Gln Tyr Asp Val Glu Lys  
20 25 30

Tyr Val Leu Val Asn Gln Pro Ser Pro Tyr Val Ser Thr Ser Tyr Asp  
35 40 45

His Asp Leu Tyr  
50

<210> 13  
<211> 15  
<212> PRT  
<213> Streptomyces coelicolor

<400> 13  
His Lys Trp Ala Asp Gln Val Glu Val Ala Phe Pro Gly Gly Ile  
1 5 10 15

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<210> 14  
<211> 11  
<212> PRT  
<213> Mycoplasma pneumoniae

<400> 14  
Phe Val Tyr Arg Val Asp Leu Arg Ser Pro Glu  
1 5 10

<210> 15  
<211> 9  
<212> PRT  
<213> Mycoplasma pneumoniae

<400> 15  
Phe Phe Glu His Ile Leu Ser Thr Asn  
1 5

<210> 16  
<211> 15  
<212> PRT  
<213> Mycoplasma pneumoniae

<400> 16  
Gly Arg Ser Tyr Phe Ile Ser Thr Ser Glu Thr Pro Thr Ala Ala  
1 5 10 15

<210> 17  
<211> 15  
<212> PRT  
<213> Mycoplasma pneumoniae

<400> 17  
Thr Ser Phe Ala Tyr Gln Arg Glu Trp Phe Thr Asp Gly Pro Ile  
1 5 10 15

<210> 18  
<211> 11  
<212> PRT  
<213> Salmonella typhi

<400> 18  
Phe Val Tyr Arg Val Asp Ser Thr Pro Pro Asp  
1 5 10

<210> 19  
<211> 15  
<212> PRT  
<213> Salmonella typhi

<400> 19  
Ser Cys Ser Gly Gly Ser Ser Asp Ser Arg Tyr Ile Ala Thr Thr  
1 5 10 15

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<210> 20  
<211> 15  
<212> PRT  
<213> Salmonella typhi

<400> 20  
Thr Met Met Arg Leu Gln Arg Glu Tyr Val Ser Thr Leu Ser Ile  
1 5 10 15

<210> 21  
<211> 11  
<212> PRT  
<213> Salmonella paratyphi

<400> 21  
Phe Val Tyr Arg Val Asp Ser Thr Pro Pro Asp  
1 5 10

<210> 22  
<211> 15  
<212> PRT  
<213> Salmonella paratyphi

<400> 22  
Ser Cys Ser Gly Gly Ser Ser Asp Ser Arg Tyr Ile Ala Thr Thr  
1 5 10 15

<210> 23  
<211> 15  
<212> PRT  
<213> Salmonella paratyphi

<400> 23  
Thr Met Met Arg Leu Gln Arg Glu Tyr Val Ser Thr Leu Ser Ile  
1 5 10 15

<210> 24  
<211> 11  
<212> PRT  
<213> Streptococcus pyogenes

<400> 24  
Val Val Tyr Arg Tyr Val Tyr Glu Thr Phe Leu  
1 5 10

<210> 25  
<211> 15  
<212> PRT  
<213> Streptococcus pyogenes

<400> 25  
Thr Lys His Ser Phe Met Ser Thr Thr Ala Leu Lys Asn Gly Ala  
1 5 10 15



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<210> 26  
<211> 15  
<212> PRT  
<213> Streptococcus pyogenes

<400> 26  
Ser Ala Val Pro Ser Glu Val Glu Leu Leu Phe Pro Arg Gly Cys  
1 5 10 15

<210> 27  
<211> 11  
<212> PRT  
<213> Listeria monocytogenes

<400> 27  
Ile Leu Tyr Arg Gly Thr Ser Ser Glu Ile Leu  
1 5 10

<210> 28  
<211> 15  
<212> PRT  
<213> Listeria monocytogenes

<400> 28  
Glu Glu Lys Gly Phe Met Ser Thr Thr Thr Ile Ser Asn Gln Thr  
1 5 10 15

<210> 29  
<211> 15  
<212> PRT  
<213> Listeria monocytogenes

<400> 29  
Ser Glu Thr Pro Glu Glu Ala Glu Val Leu Phe Asn Ile Gly Gln  
1 5 10 15